

CHAPTER 1

PROJECT DESCRIPTION

1.1 INTRODUCTION

In its California Public Utilities Commission (CPUC) application (A.03-12-039) for a permit to construct the Potrero to Hunters Point 115 kilo-volt (kV) Cable Project pursuant to General Order (GO) 131-D, Pacific Gas and Electric Company (PG&E) is proposing a project that includes the installation of approximately 2.5 miles of underground 115 kV single-circuit cable, with a power rating of 200 megavolt amperes (MVA), to serve as a transmission line between PG&E's Potrero and Hunters Point switchyards ("Potrero to Hunters Point 115 kV Cable Project" or "proposed project") (see **Figure 1-1**). The proposed project would also include certain modifications to each of the switchyards. Additionally, construction staging areas would be needed to store equipment and excavated materials. The proposed project is intended to provide necessary internal transmission network reinforcements to the electrical transmission system serving the City and County of San Francisco (City) to improve system reliability. This Mitigated Negative Declaration (MND) considers the potential environmental impacts from PG&E's proposed project.

1.2 PURPOSE AND NEED

PG&E's most recent electric demand forecast for San Francisco, which was used to develop the base case loads for PG&E's *2003 Electric Transmission Grid Expansion Plan*, anticipates a growth rate of about 15 megawatts (MW) per year. According to PG&E, the Potrero to Hunters Point 115 kV Cable Project would provide necessary internal transmission network reinforcements to the electrical transmission system serving the City in order to improve reliability, better serve load, and provide a component needed to meet the goal of closing PG&E's Hunters Point Power Plant.¹

The California Independent System Operator (CAISO) California Grid Planning Criteria, which include the Planning Standards and Guidelines of the North American Electric Reliability Council (NERC) that focus on system reliability, are as follows:

¹ In 1998, the City and County of San Francisco and PG&E entered into an agreement to "permanently shut down the Hunters Point Power Plant as soon as the facility is no longer need to sustain electric reliability in San Francisco and the surrounding area and the Federal Energy Regulatory Commission (FERC) has authorized PG&E to terminate PG&E's Reliability Must Run Contract for the facility." Decision (D.).04-08-046. The CPUC approved that settlement in (D.) 98-10-029.



SOURCE: Environmental Science Associates (2004) PG&E's Potrero to Hunters Point 115 kV Cable Project (A.03-12-039) / 204039 ■

Figure 1-1
Project Overview Map

- Category A. Normal ratings of equipment will not be exceeded with all generators, lines, and transformers in service. The voltage must be maintained within normal limits under these conditions.² No loss of load is allowed.
- Category B. Emergency ratings of equipment will not be exceeded with the loss of a single circuit, generator, or transformer, or of a single circuit and a single generator. The voltage must be maintained within emergency limits under these conditions. No loss of load, except as noted in the footnote below, is allowed.³
- Category C. Emergency ratings of equipment will not be exceeded with the loss of a single circuit, generator, or transformer, or of a single circuit and a single generator; followed by manual system adjustments, and then followed by loss of another single circuit, generator, or transformer. The voltage must be maintained within emergency limits under these conditions. Loss of load, except as noted in the footnote below, is not allowed.⁴

Using the CAISO California Grid Planning Criteria, PG&E transmission planners evaluated various transmission alternatives and concluded that constructing a new 115 kV underground cable from Potrero to Hunters Point is the most feasible and cost-effective means of adding reliability to PG&E's internal transmission network in the city. For example, construction of a new 115 kV underground cable from Potrero to Hunters Point would allow PG&E to transmit power generated at Potrero to Hunters Point for further distribution if the generation capabilities at the Hunters Point Power Plant failed, or would allow the load on the internal transmission network to be distributed to the Potrero to Hunters Point line if another line needed to be taken out of service for repairs without overloading the current internal system.

Additionally, the San Francisco Stakeholders Study Group, a broad-based, multidisciplinary study group led by the CAISO,⁵ studied the issue of reliability in the *San Francisco Peninsula Long-Term Electric Transmission Planning Technical Study: 2004-2009*. The study indicated that substantial additions to PG&E's electric transmission systems would be required in order to meet growth demand and to maintain the reliability of the transmission system while complying with the transmission planning options for the San Francisco Bay Area as identified by the

² Normal voltage and emergency limits are based on average customer equipment voltage requirements and California Public Utilities Commission Electric Rule 2.

³ "Planned or controlled interruption of generators or electric supply to radial customers or some local network customers, connected to or supplied by the faulted component or by the affected area, may occur in certain areas without impacting the overall security of the interconnected transmission systems. To prepare for the next contingency, system adjustments are permitted, including curtailments of contracted firm (non-recallable reserved) electric power transfers." (NERC Planning Standards, Table 1, footnote b)

⁴ "Depending on system design and expected system impacts, the controlled interruption of electric supply to customers (load shedding), the planned removal from service of certain generators, or the curtailment of contracted firm (non-recallable reserved) electric power transfers may be necessary to maintain the overall security of the interconnected transmission systems" (NERC Planning Standards, Table 1, footnote d). CAISO Planning Standards specify that: "Involuntary load interruptions are an acceptable consequence in planning for CAISO Planning Standard Category C and D disturbances (multiple contingencies with the exception of the combined outage of a single generator and a single transmission line), unless the CAISO Board decides that the capital project is clearly cost effective (after considering all the costs and benefits)." In cases where this application would result in the elimination of a project or relaxation of standards that would have been built under past planning practices, these cases will be presented to the CAISO Board for a determination on whether the projects should be constructed. (CAISO Planning Standards; February 7, 2002, page 3)

⁵ Members include: CAISO, the City and County of San Francisco, PG&E, and other interested stakeholders such as the CPUC Office of Ratepayers Advocate, City of Palo Alto, and Southeast Alliance for Environmental Justice.

CAISO.⁶ Without new transmission or generation facilities, the current system would be subjected to thermal overloads under various single and multiple facility outages. The study also noted that an overlapping outage of a single transmission cable and one generating unit might result in system voltage collapse⁷, a level of risk that is inconsistent with planning criteria.

The San Francisco Stakeholders Group evaluated a variety of potential solutions to address these deficiencies. Their evaluation focused primarily on generation and transmission, dismissing load reduction as an effective long-term solution due to the magnitude of load reduction that would be required to address the deficiencies in the system. Although specific generation projects were not evaluated in the study, the San Francisco Public Utilities Commission included generation additions to PG&E's system as a long-term initiative to meet growing power needs and to increase reliability (SFPUC, 2002) which include the City and County of San Francisco's plans to install three 48 MW LM6000 combustion turbines at the Potrero Substation and one at the San Francisco International Airport. The preferred transmission project was determined to be the Jefferson-Martin 230 kV line, which would bring power to the city, in combination with the internal transmission network reinforcement including construction of a 115 kV underground cable between Potrero and Hunters Point to provide reliability within the city. In December 2000, CAISO formally approved the PG&E's Potrero to Hunters Point 115 kV Cable Project.⁸

According to PG&E, the Potrero to Hunters Point 115 kV Cable Project would provide one of the components needed to facilitate the goal of closing PG&E's Hunters Point Power Plant. In accordance with PG&E's 1998 settlement agreement with the City and County of San Francisco, PG&E will "permanently shut down the Hunters Point Power Plant as soon as the facility is no longer needed to sustain electric reliability in San Francisco and the surrounding area and the Federal Energy Regulatory Commission (FERC) has authorized PG&E to terminate PG&E's Reliability Must Run (RMR)⁹ Contract for the facility."¹⁰

In 2003, CAISO considered the potential retirement of power generation at the Hunters Point Power Plant within a study to determine the load serving capabilities for the San Francisco Peninsula under a variety of transmission and generation scenarios (*San Francisco Peninsula Load Serving Capability Study*) (CAISO, 2004a). In September 2004, CAISO created an action plan that meets reliability standards and allows for the release of the Hunters Point Power Plant

⁶ Included as part of the CAISO California Grid Planning Criteria are the Planning Standards and Guidelines of the North American Electric Reliability Council (NERC). As a part of the CAISO long-term plan (five to ten years) PG&E has agreed on transmission planning options for the San Francisco Bay area. This final stakeholder report is posted on the California ISO website at (<http://temp.sfgov.org/sfenvironment/aboutus/energy/transmission.pdf>).

⁷ System voltage collapse occurs when demands on the electric system exceed the ability of the operator to maintain the voltage level needed for service, such as during the east coast blackout in August 2003.

⁸ The CAISO reiterated its belief that the proposed project was necessary in its April 18, 2003 letter from Terry Winters to Kevin Dasso of PG&E and San Francisco City Attorney Therese Mueller, and its July 4, 2004 letter from Jim Delmers to San Francisco Mayor Gavin Newsom, et. al.

⁹ A RMR Contract is a rate schedule on file at FERC and in effect, or a contract between the Independent Service Operator (ISO) and a Generator, giving the ISO the right to call on the Generator to generate Energy or provide Ancillary Services from the Generating Unit as and when required to ensure the reliability of the ISO Controlled Grid, in return for certain payments (Wollack and Bushnell, 1999)

¹⁰ D. 04-08-046, p.26.

from its RMR agreements. In order to release Hunters Point existing generation Units #1 and #4 from their RMR Agreements, seven projects are required, including: San Mateo-Martin # 4 Line 60-115 kV Voltage Conversion; Ravenswood #2 230/115 kV transformer project; San Francisco Internal Cable Higher Emergency Ratings; Tesla-Newark #2 230 kV Line Reconductoring; Ravenswood-Ames #1 and #2 115 kV Lines Reinforcement; San Mateo 230 kV Bus Insulator Replacement; *Potrero to Hunters Point 115 kV Cable*; Potrero #3 retrofit with emission control technology; and the Jefferson-Martin 230 kV Line. To release Hunters Point Units #2 and #3, which operate as synchronous condensers to produce voltage support and are not in electric energy production mode, from the RMR Agreements, a Static Var Compensator (SVC) located at Potrero Substation would be required to both replace these synchronous condensers as well as support reactive capacity lost when Hunters Point Unit #4 is eventually retired.¹¹

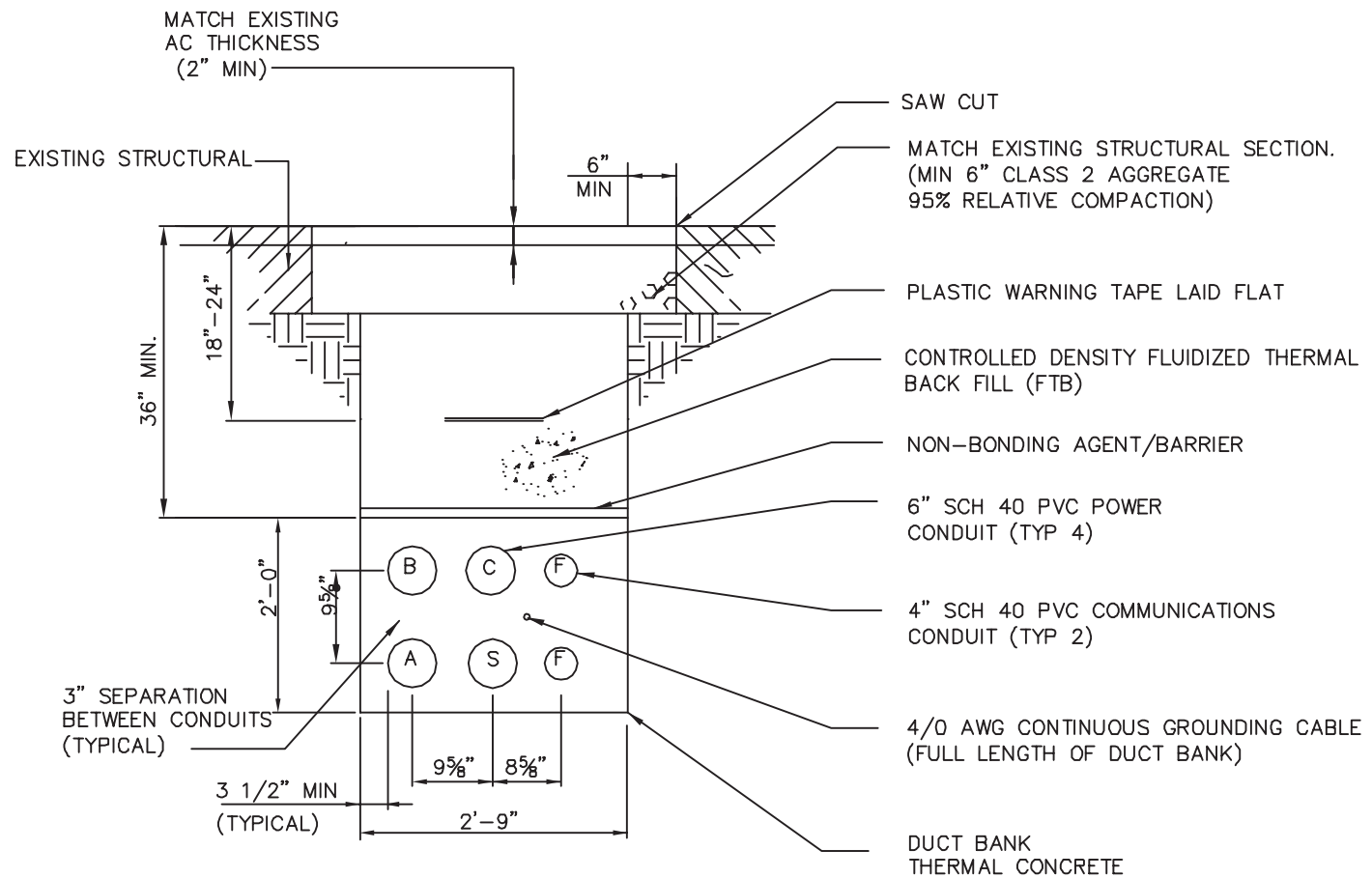
According to both PG&E and the San Francisco Stakeholders Group, the proposed project would support the necessary internal transmission network reinforcements needed for increased reliability in the City; and, in conjunction with the other projects outlined in the CAISO action plan, would provide a component necessary to meet the goal of permanently shutting down the Hunters Point Power Plant.

1.3 PROJECT COMPONENTS

The components of the proposed project are as follows:

- Underground Power Line.** The proposed project would have an underground power line (115 kV dielectric cable) within duct banks (approximately 2 feet wide and 6 feet deep) containing four 6-inch-diameter conduits. The duct bank would also carry two 4-inch-diameter communication conduits for fiber optic cables. PG&E asserts that these communication cables would be used for substation communications. **Figure 1-2** depicts a typical schematic of a duct bank. For the proposed project route, approximately eight underground concrete power and eight concrete communication vaults would be installed in line with the duct bank. Each power vault, which would have two manhole covers, would measure approximately 20 feet long, 10 feet wide, and 8 feet high. While each communication vault, which would have one manhole cover, would measure approximately 6 feet long, 4 feet wide, and 6.5 feet deep. The communication vaults would be located near every other power vault which would be spaced at approximately 1,600 to 2,000 feet apart.
- Switchyards.** New equipment would be required within the Potrero and Hunters Point Switchyards. Specifically, the proposed project would require constructing termination structures, transition structures, breakers, coupling capacitive voltage transformer

¹¹ To account for the projected retirement of Hunters Point Units 2 & 3 and eventually Units 1 & 4, PG&E commissioned a comprehensive voltage analysis for the Greater San Francisco Bay Area. This study included the analysis of steady-state pre and post-contingency, post-transient, transient stability, and mid-term voltage stability analysis that was conducted to fully understand any dynamic voltage concerns not seen through normal analytical methods. As a result of this analysis, it was determined that a SVC at Potrero Substation in combination with new shunt capacitors at Ravenswood Substation would compensate for the retirement of the various units at Hunters Point as well as accommodate projected load growth within the Greater Bay Area for many years to come. In April 2003, CAISO approved the Potrero SVC project, which is scheduled for operation by early December 2005.



TYPICAL DUCT BANK
SECTION 1
BACKFILL TYPE A

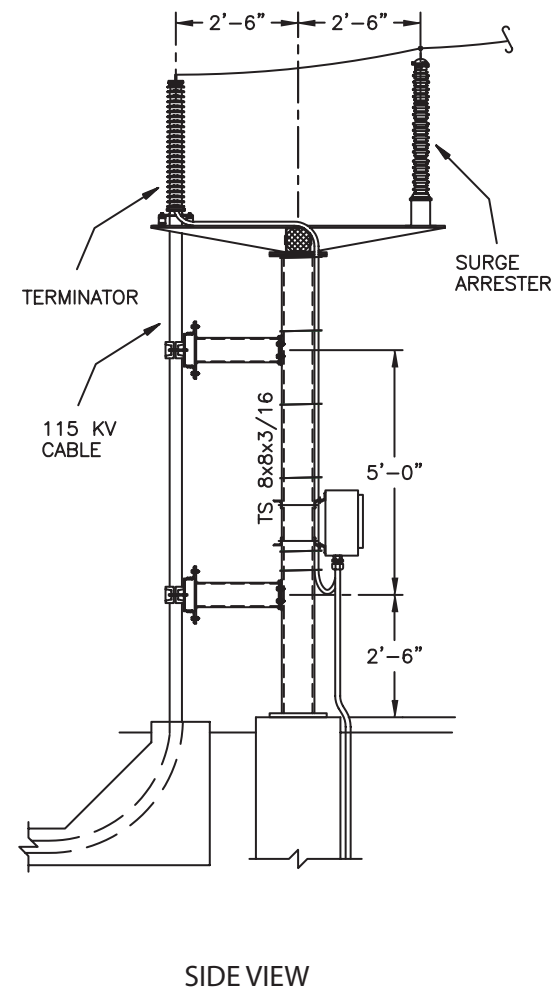
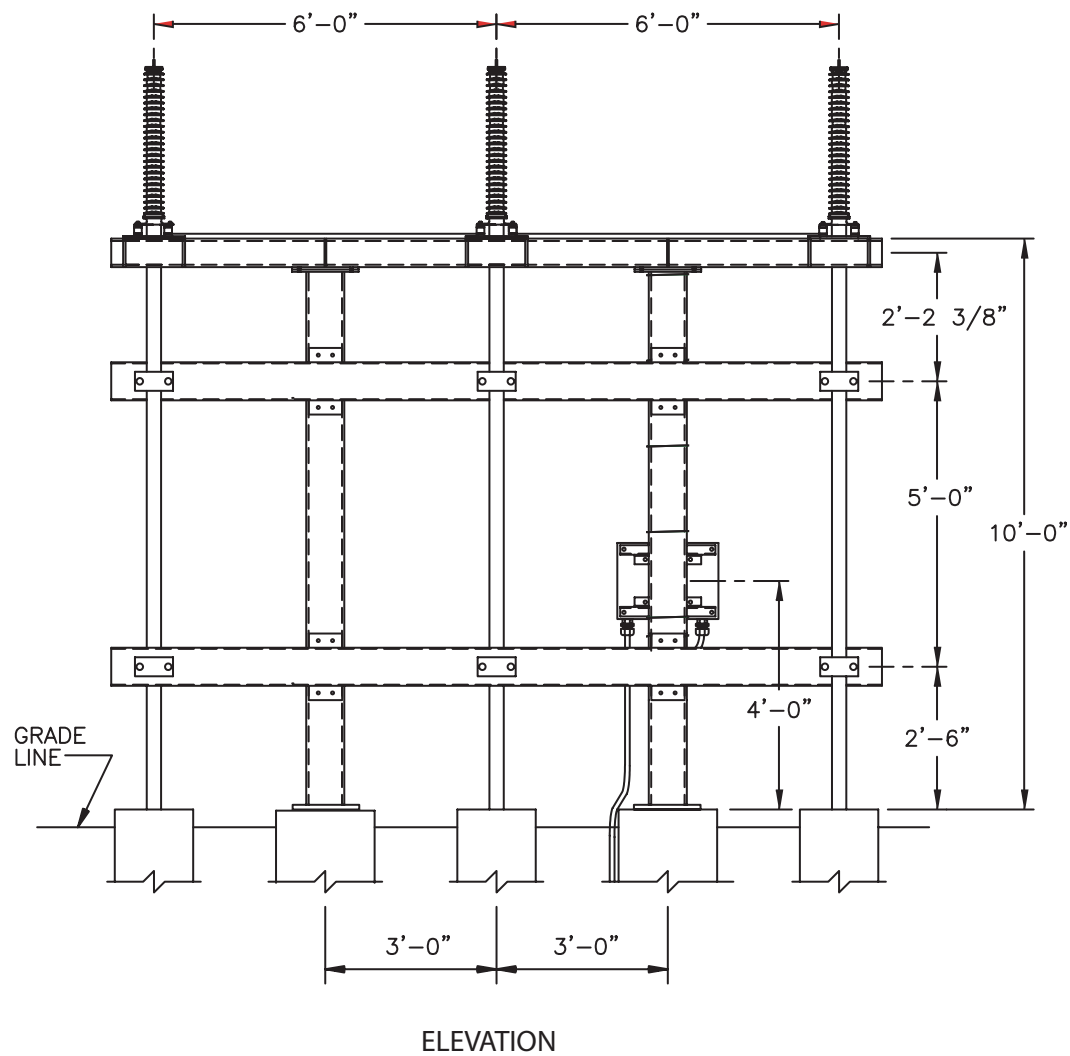
structures, and bus connections at both the Potrero and Hunters Point Switchyards. Lighting would be installed on the breaker and bus structures at each substation and on the control building at the Hunters Point Switchyard. **Figures 1-3** through **1-7** depict the types of structures to be installed at the switchyards. In addition, a prefabricated metal control building measuring 16 feet wide by 48 feet long would be installed at the Hunters Point Switchyard. Photographs of a representative control building are shown in **Figure 1-8**. Neither switchyard would be expanded beyond the existing fence line for these modifications.

- Excavated Materials Storage and Staging Areas. Across the street from the Potrero Switchyard on the northeast corner of Illinois Street and 22nd Street, PG&E's general construction yard provides storage for vehicles and other types of equipment. This yard would be used as a staging area and storage site for materials removed, as well as those used (i.e. concrete, plastic conduit, and asphalt) during the construction phase. This yard is primarily cleared and graded with gravel.

PG&E has another general construction yard located near the Hunters Point Switchyard, at the intersection of Cargo Way and Jennings Street, which may be used during project construction. This existing construction yard is completely cleared and paved. As an alternative location to this general construction yard, PG&E is discussing with the Port of San Francisco the possibility of using land on Port property located northeast of Cargo Way, between Jennings and Third Street. Materials excavated from the trench and other work areas may be used as backfill, if suitable, with any excess materials being tested and disposed of in accordance with applicable requirements. Additionally, a project construction office trailer would be located at one of these sites.

1.4 EXISTING SYSTEM

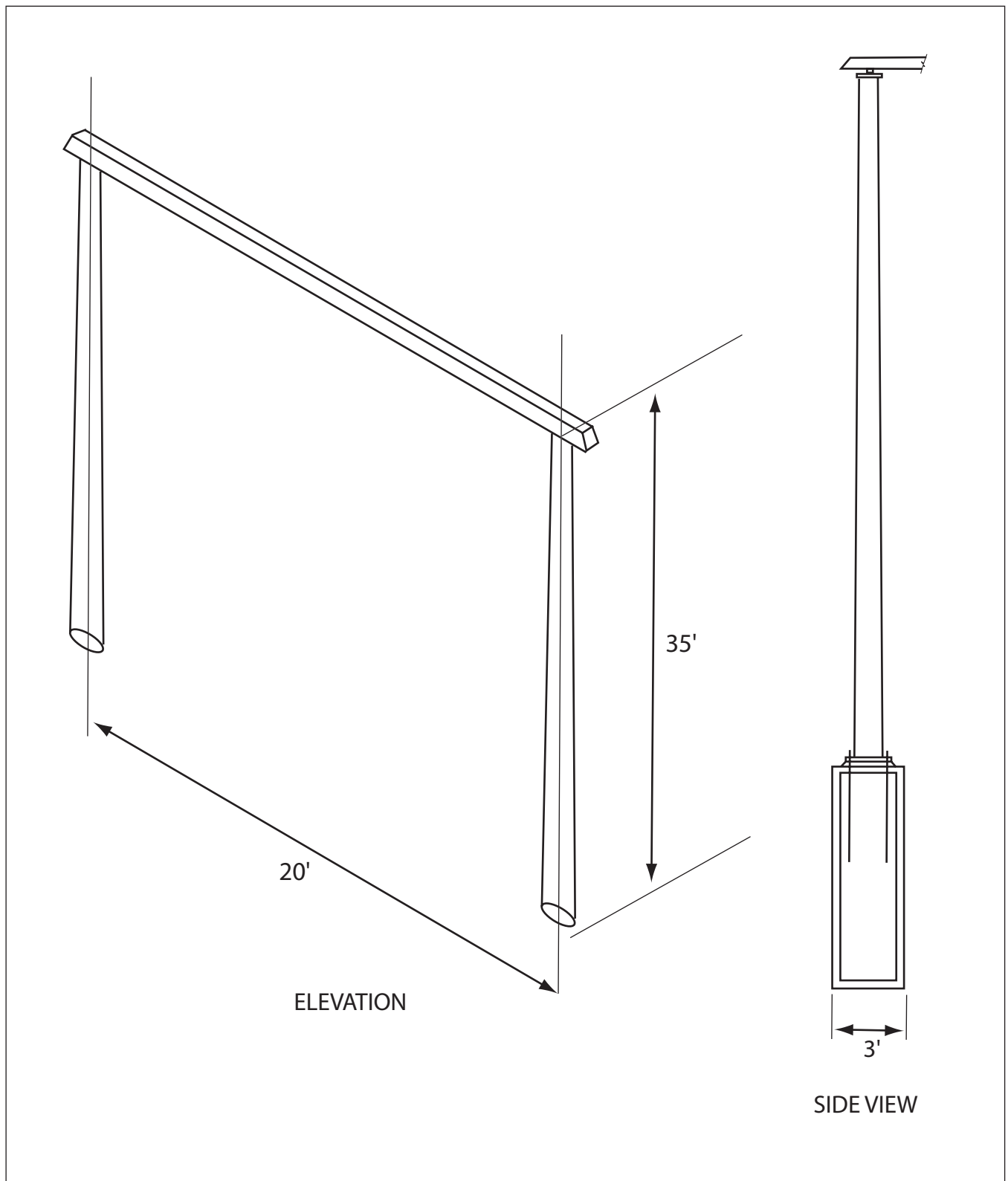
The Potrero and Hunters Point Power Plants provide a combined generation capacity of 570 MW (213 MW and 357 MW, respectively) to support the load serving needs of the San Francisco–Peninsula Area. The balance of the load serving needs is delivered through PG&E's transmission system from generation resources outside the San Francisco–Peninsula Area. Each power plant includes a fossil-fueled (natural gas) steam generator, Hunters Point Unit #4 and Potrero Unit #3, which are approaching or beyond their designed service life. The remainder of these plants consists of four diesel fired Combustion Turbines (CTs): Potrero Units #4, #5, #6 and Hunters Point Unit #1. Hunters Point Units #2 and #3 operate as synchronous condensers to produce voltage support and are not in electric energy production mode. Currently, a Static Volt-Ampere-Reactive (VAR) Compensator is being constructed, with operation scheduled for December 2005, at the Potrero Substation to replace the Hunters Point Unit #2 and #3 synchronous condensers. The Static VAR Compensator will allow continuous control of power swings under various system conditions, since the transmitted load varies considerably from one hour to another. Due to their long years of service, these plants have recently begun to exhibit an increased trend of unreliability, with more forced outages, longer duration outages, and maintenance needs increasing in cost and scope. These power plants are also facing additional limitations and/or maintenance costs due to increasingly restrictive air quality regulations.

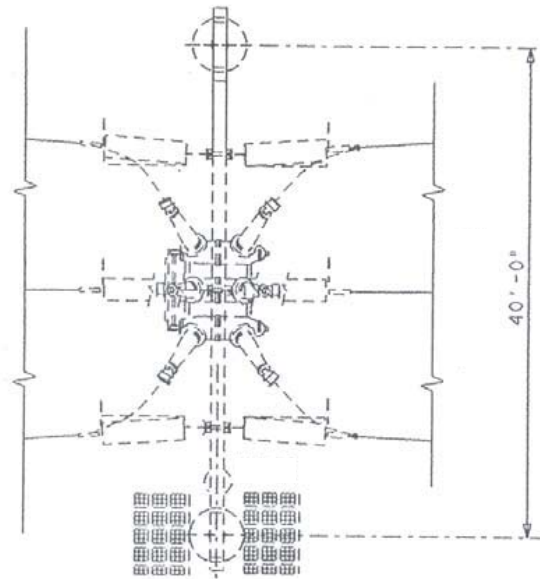


SOURCE: PG&E Department of Engineering (2003);
Environmental Science Associates (2004)

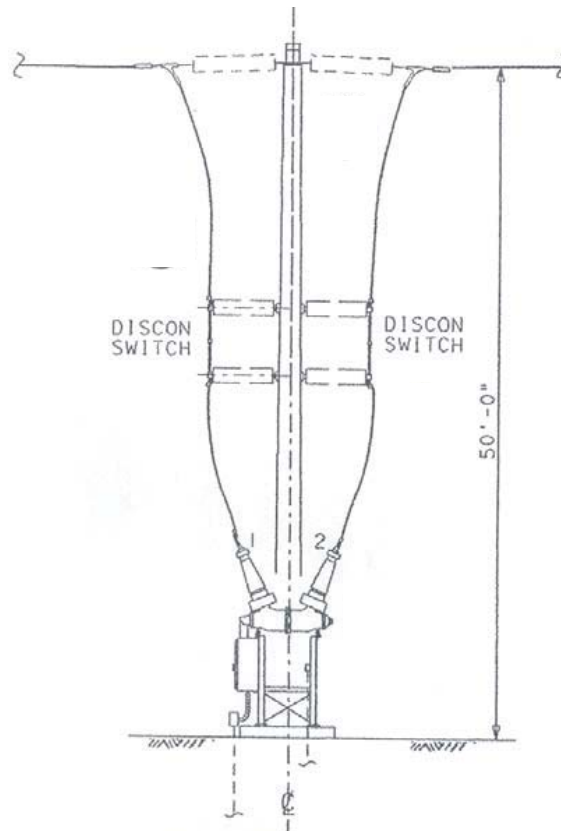
PG&E's Potrero to Hunters Point 115 kV Cable Project (A.03-12-039) / 204039 ■

Figure 1-3
Typical Cable Termination Structure





PLAN VIEW



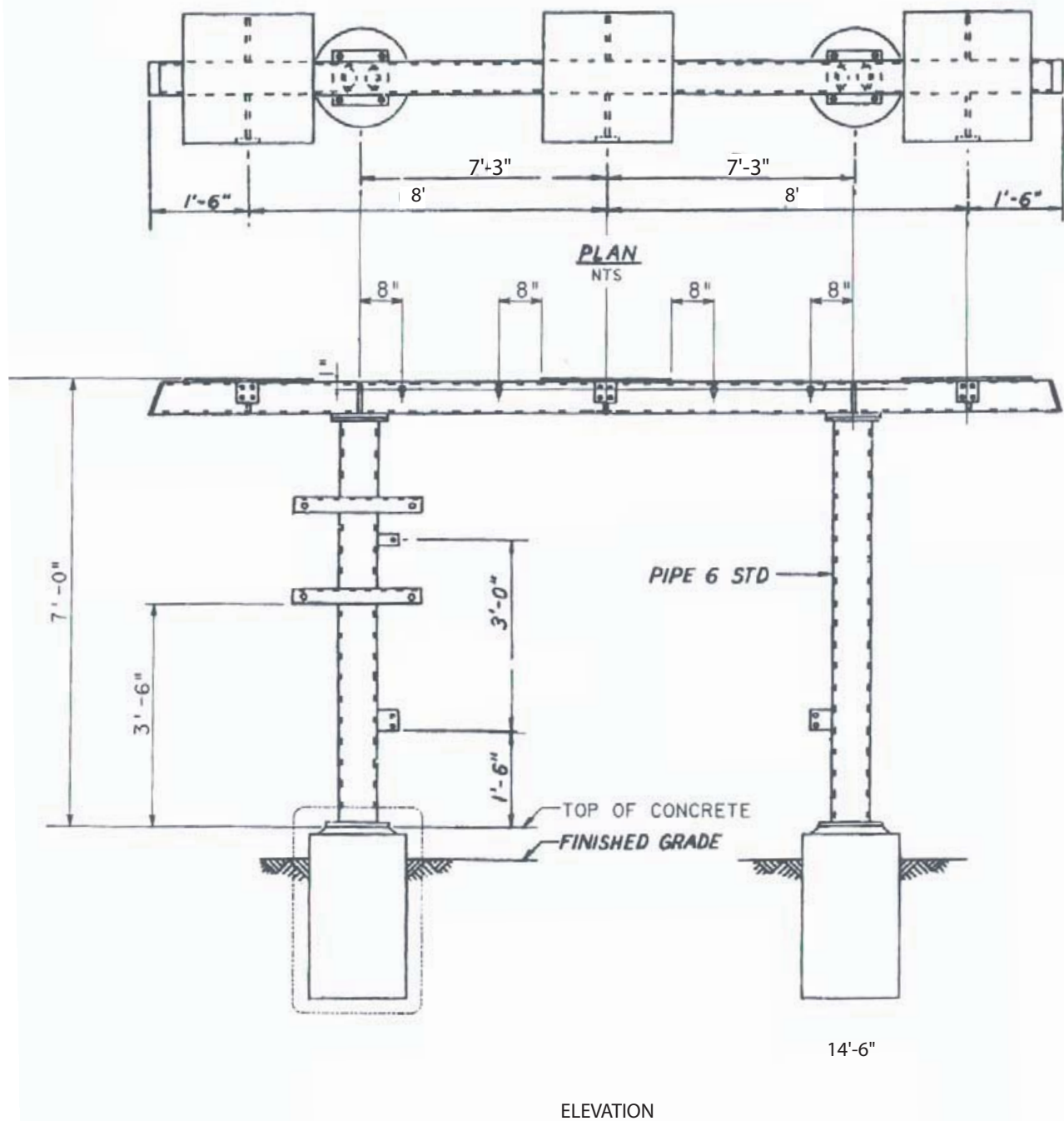
ELEVATION

SOURCE: PG&E Department of Engineering (2003);
Environmental Science Associates (2004)

PG&E's Potrero to Hunters Point 115 kV Cable Project (A.03-12-039) / 204039 ■

Figure 1-5

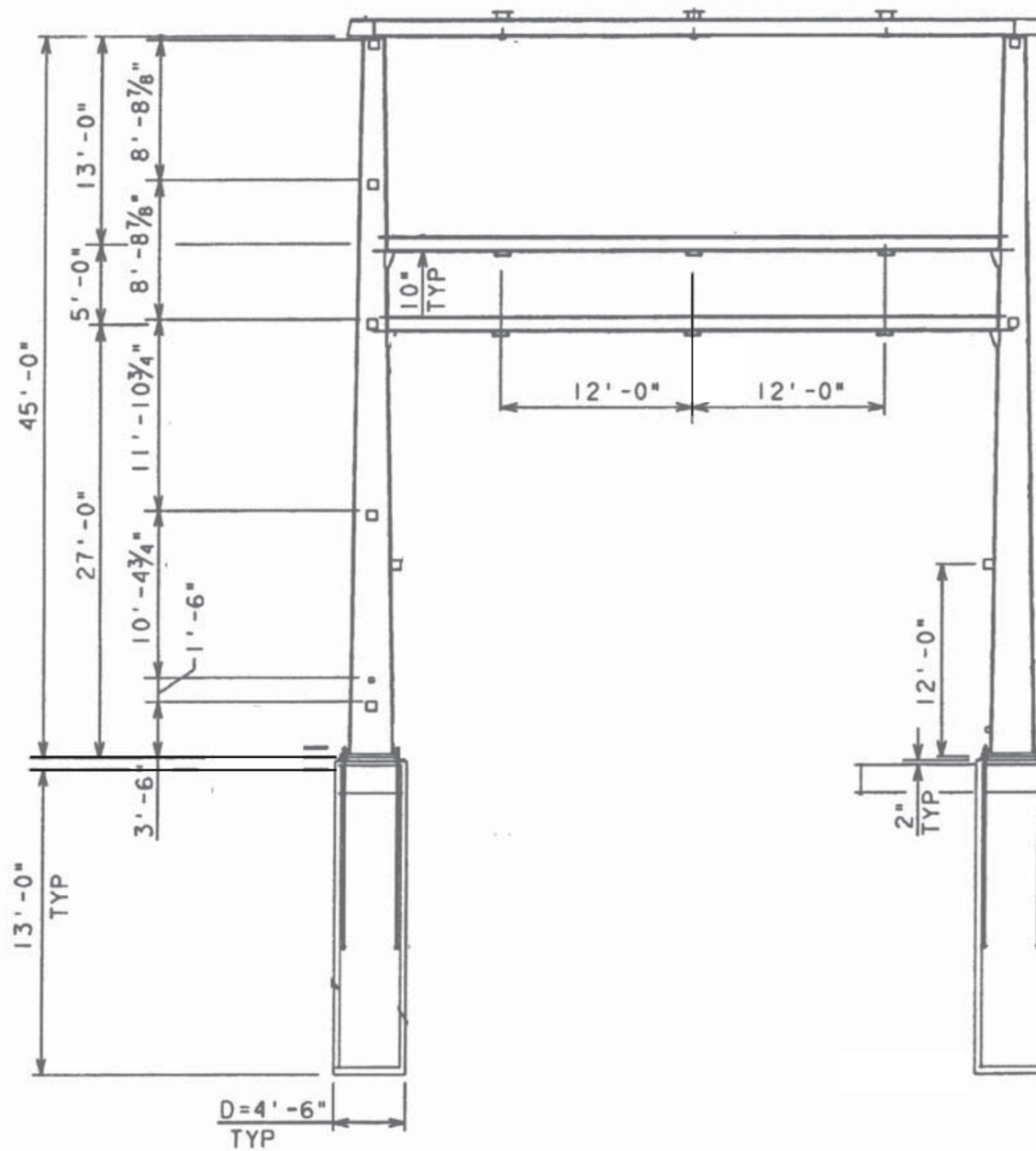
Typical Breaker Structure –
Plan and Elevation



SOURCE: PG&E Department of Engineering (2003);
Environmental Science Associates (2004)

PG&E's Potrero to Hunters Point 115 kV Cable Project (A.03-12-039) / 204039 ■

Figure 1-6
Typical Coupling Capacitive
Voltage Transformer (CCVT) Structure



ELEVATION

Figure 1-7
Typical Breaker Connection Structure – Elevation



PG&E's Potrero to Hunters Point 115 kV Cable Project (A.03-12-039) / 204039 ■

SOURCE: PG&E Department of Engineering (2003);
Environmental Science Associates (2004)

Figure 1-8
Representative Control Building Photographs

PG&E supplies customer load within the city with electricity imported on thirteen 115 kV underground cables, which are supplemented by local generation, and two 230 kV underground cables. The 115 kV cable ratings range from 130 MVA to 160 MVA; the 230 kV cables each have a 420 MVA rating. The cable system is configured to maximize electric supply to the seven substations in San Francisco (Bayshore, Embarcadero, Larkin, Martin, Mission, Hunters Point Switchyard, and Potrero Switchyard), which supply the distribution system serving PG&E's customers in the city. The cable system also provides generation outlets for the Potrero and Hunters Point Power Plants.

1.5 PROJECT LOCATION

The proposed project is located in the eastern Potrero Hill, northern Bayview and Hunters Point neighborhoods of San Francisco (see **Figure 1-1**). The proposed project route traverses city street rights-of-way (ROW) predominately within commercial and industrial areas with the exception of passing a residential multi-unit located on Minnesota Street between 25th and 26th Streets.

1.6 PG&E'S PROPOSED PROJECT

PG&E's proposed project route (as shown on **Figure 1-1**) begins at the northwest corner of the Potrero Switchyard between 22nd and 23rd Streets, and runs south on Illinois Street until turning west on 23rd Street. From 23rd Street, the route turns south on Tennessee Street and continues for two blocks, until turning west on 25th Street. The route continues along 25th Street for a short distance, turns south on Minnesota Street (milepost [MP] 0.05), passing one residential building and continues for two blocks before turning west on Cesar Chavez Street. It follows Cesar Chavez Street crossing under Interstate 280 and the Caltrain railroad tracks and then turning south where it crosses property owned by the City and the San Francisco Chronicle. The route then turns west onto Marin Street before turning south-southeast onto Evans Avenue. The route follows Evans Avenue and crosses under Interstate-280 and the Caltrain railway and proceeds down Evans Avenue for approximately 1 mile before entering the Hunters Point Power Plant property. The route terminates at the Hunters Point Switchyard at MP 2.5.

PG&E has agreed to a mitigation measure has been proposed to move a segment of the route from Minnesota Street between 25th Street and Cesar Chavez to Tennessee Street between 25th Street and Cesar Chavez (see **Figure 1-1**). The CPUC proposed this route change in response to comments received from the public during the public comment period for the Initial Study that reviewed the proposed project application. In order to reduce the potential proposed project's impacts to residents of Minnesota Street, mitigation has been proposed to move the route to Tennessee Street. Tennessee Street does not have any single or multi-family residences that would be directly affected during project construction or operations. The proposed mitigation measure and potential impacts related to the proposed route change is discussed in detail in Section 2.9, *Land Use, Plans, and Policies* and further potential impacts are discussed in Section 2.3, *Air Quality* and Section 2.15, *Transportation and Traffic*.

1.7 RIGHT-OF-WAY REQUIREMENTS

The majority of project construction would be restricted to the width of the franchised areas (public ROW). A minimum construction access width of 65 feet would be required to allow for trench excavation and construction of the duct bank. PG&E's contractors would park construction equipment on the opposite side of the street. Additional space, which is further discussed in the *Special Construction Methods* section below, would be required at the vault and boring locations. The permanent underground electric transmission cable ROW where the cable line crosses City-owned and private property would be 45 feet in width.

1.8 CONSTRUCTION

1.8.1 REQUIRED CONSTRUCTION PRACTICES

The system would be installed and maintained in accordance with standard engineering practices and would conform, when applicable, with the National Electrical Safety Code, Rules for Construction of Underground Communications Systems (GO No. 128) of the California Public Utilities Commission, the California Administrative Code, Title 24, Part 3, and any other governmental agency standards¹² or codes which are adopted in the future which directly or indirectly apply to underground cable system construction standards.

1.8.2 UNDERGROUND CONSTRUCTION METHODS

The installation of the underground cable, duct banks, and splice vaults would be completed using a cut-and-cover method (open trenching) along the majority of the route. Crossings of railroads may require a duct bank crossing that allows continuous use of the railroad. The following steps represent the major construction activities.

STEP 1 – TRENCHING/DUCT BANK INSTALLATION

Prior to trenching, PG&E would notify other utility companies (via the Underground Service Alert) to locate and mark existing underground structures along the proposed cable line route, and also would conduct exploratory excavations (potholing) to approve the locations for proposed facilities. PG&E would apply for an excavation permit from the city for trenching in City streets. No roads would be completely closed, although one-way traffic controls would be implemented. PG&E would also coordinate with the Port of San Francisco for the section of Illinois Street that falls within their jurisdiction between 22nd and 23rd Streets.

After the route is marked, the pavement within the trench line would be removed. The typical trench dimensions for installation of a single circuit would measure approximately 2 feet wide by 6 feet deep, although typical trench depths may vary depending on soil stability and the presence of existing substructures. The trench would be widened and shored where needed to meet

¹² For a more detailed explanation of the requirements under GO 128 see <http://www.mid.org/services/esg/128.pdf>

California Occupational Safety and Health Administration safety requirements. Dewatering would be conducted using a pump or well points to remove water from the trench. The water would then be pumped into containment tanks and tested for turbidity and pH values. If the water meets acceptable discharge standards, it would be discharged into the storm sewer system. Otherwise, it would be disposed of in accordance with state and federal standards.

Typically, a maximum open trench length of 150 to 300 feet on each street would occur at any one time, depending on City permitting requirements. Steel plating would be placed over the trench to maintain vehicular and pedestrian traffic across areas that are not under active construction. This safety measure will also be completed at the conclusion of each construction day. Traffic controls would also be implemented to direct local traffic safely around the work areas. PG&E would apply for a Special Traffic Permit from the City and also coordinate provisions for emergency vehicle and local access with City personnel.

As the trench for the underground 115 kV cable is completed, PG&E would install the cable conduit, ground wire, and concrete conduit encasement duct bank. At about every 1,600 to 2,000 feet along the trench, the installation of splice vaults would require a larger excavation (as described in Step 2, below). The duct bank cover would measure at least 36 inches.

Most of the duct bank would be in a two-by-two duct configuration (see **Figure 1-2**), with occasional transitions to a flat configuration to clear substructures in highly congested areas or to fan out to termination structures at the switchyards. The duct bank typically would consist of four 6-inch-diameter polyvinyl chloride (PVC) conduits. The dimensions of the duct bank would be approximately 24 inches wide by 34 inches in height. The one electrical cable would be contained within three of the 6-inch-diameter PVC conduits and one conduit would be left open as a spare for future use should a single cable fail. Fiber optic lines that PG&E asserts would be for system protection and communication would be housed in two 4-inch-diameter conduits that would be installed above the top level of the 6-inch-diameter conduits and within the thermal backfill. The three electrical cables that make up one circuit would be capable of carrying 200 MVA at the normal conductor temperature rating of 90 degrees centigrade. The 200 MVA load on this circuit would be met using copper conductor extruded dielectric cable.

A minimum radial clearance of 12 inches would be required where an electrical transmission duct bank crosses or runs parallel to other substructures such as gas lines, telephone lines, water mains, storm lines, and sewer lines. In addition, a 5-foot minimum radial clearance would be required where the new duct bank crosses another substructure at right angles. A 15-foot minimum radial clearance would be required between the duct bank and any parallel substructure whose operating temperature significantly exceeds the normal earth temperature. Such facilities may include other underground transmission circuits, primary distribution cables (especially multiple-circuit duct banks), steam lines, or heated oil lines.

Once the PVC conduits are installed, thermal-select or controlled backfill would be transported, placed, and compacted. A road base backfill or slurry concrete cap would be installed and the road surface would be restored in compliance with the locally-issued permits. While the

completed trench sections are being restored, additional trench line would be opened farther down the street. This process would continue until the entire conduit system is in place.

Throughout construction of the trench, duct bank, and vaults, the asphalt, concrete, and other excavated material would be hauled off to a temporary excavation material storage site that would be located at the PG&E General Construction yard at the northeast corner of 22nd Street and Illinois Street near the Potrero Switchyard. If suitable, any excavated material would be used as backfill. When necessary, clean backfill would be imported to the project area. Any excess materials would be tested and disposed of in accordance with applicable requirements. The total volume of materials to be excavated is estimated to be approximately 10,000 cubic yards.

Truck traffic generation would depend upon the rate of the trenching and the size of vault excavation, but would be approximately 33 trips per day. Jackhammers would be used occasionally to break up sections of concrete that the saw-cutting and pavement-breaking machines could not reach. Other miscellaneous equipment would include a concrete saw, various paving equipment, and pickup trucks. **Table 1-1** lists vehicles and equipment that are typically used to construct an underground cable transmission line project. In general, the only equipment left at the trench site overnight would be an excavator.

STEP 2 – VAULT INSTALLATION

As previously discussed, PG&E would excavate and place approximately eight preformed concrete power vaults at approximately 1,600 to 2,000 foot intervals and two communication vaults near every other installed power vault during trenching. The power vaults would be initially used to pull the cables through the conduits and to splice cables together. During operation, power vaults provide access to the underground cables for maintenance inspections and repairs. The vaults would be constructed of prefabricated, steel-reinforced concrete with inner dimensions of the power vaults being approximately 20 feet long, 10 feet wide, and 8 feet high and the communication vaults being approximately 6 feet long, 4 feet wide, and 6.5 feet deep. The vaults would be designed to withstand the maximum likely earthquake in the area, as well as heavy truck traffic.

The total excavation footprint for a power vault would be approximately 22 feet long, 12 feet wide, and 10 feet deep. Installation of each vault would occur over a one-week period with excavation and shoring of the vault pit followed by delivery and installation of the vault, filling and compacting the backfill, and repaving the excavation area.

STEP 3 – CABLE PULLING, SPLICING, AND TERMINATION

After installation of the conduit, PG&E would install cables in the duct banks. Each cable segment would be pulled into the duct bank, spliced at each of the vaults along the route, and terminated at the switchyards. The three electric cables and one communication cable would be pulled through individual ducts at the rate of two of the three segments between vaults per day. To pull the cable through the duct bank, a cable reel is placed at the end of a section and a pulling

TABLE 1-1
EQUIPMENT TYPICALLY USED DURING CONSTRUCTION

Equipment	Use
Pickup trucks	Transport construction personnel
2-ton flatbed truck	Haul materials
Flatbed boom truck	Haul and unload materials
Rigging truck	Haul tools and equipment
Mechanic truck	Service and repair equipment
Winch truck	Install and pull rope into position in conduits
Cable puller truck	Pull transmission cables through conduits
Cement trucks	Transport and pour backfill slurry
Shop vans	Store tools
Crawler backhoe	Excavate trenches (excavate around obstructions)
Large backhoe	Excavate trenches (main trencher)
Dump trucks	Haul trench and excavation materials/import backfill
Large mobile crane	Lift/load/set 20-ton cable reels and prefabricated 40-ton splice vaults and lift cable ends on terminating structures
Small mobile cranes (< 12 tons)	Load and unload materials
Cable reel trailers	Transport cable reels and feed cables into conduits
Splice trailer (40-foot)	Splicing supplies/air condition manholes
Air compressors	Operate air tools
Air tampers	Compact soil
Rollers	Repave streets over trench and manhole locations
Portable generators	Construction power
Horizontal dry boring equipment	For horizontal bores
Baker (water) storage tanks	Store water pumped from trenches, if needed
Pumps	Remove water from trench, if needed
Shoring boxes	Maintain trench walls, prevent collapse of loose soils or sand
Tank trucks	Transport water from Baker tanks, to process/disposal facility

SOURCE: Essex Environmental (2003)

rig is placed at the other end of the section. A fish line is blown directly into the duct, attached to a larger rope that is then pulled into the duct. The rope is then attached to cable pulling eyes for pulling. To ease pulling tensions, a lubricant is applied to the cable as it enters the duct.

Cables would be spliced at all vaults after they are completely pulled through the ducts. During construction, the vaults must be kept dry at all times to prevent contamination of the unfinished splices with water or impurities. Splicing would usually take 8 to 10 hours per day. A splice trailer would be positioned adjacent to the vault manhole openings. A mobile power generator would be located directly behind the trailer.

At each end of the proposed route, cables would rise out of the ground on a transition structure and terminate at the switchyards.

STEP 4 – SPECIAL CONSTRUCTION METHODS

The proposed project may require three bores: two to cross the Third Street Light Rail ROW at the intersections of 23rd Street and Third Street and Evans Avenue and Third Street, and one to cross a railroad spur on Evans Avenue between Rankin Street and Quint Street. There are two types of borings: horizontal boring and directional drilling. Horizontal boring is an auguring operation that simultaneously pushes a casing beneath the obstruction, which is usually used for shorter crossings (less than 400 feet long). Directional drilling is performed by using a steerable jet bit to cut the earth and create a small pilot hole. Once the jet bit has reached the opposite side, a reamer is attached to widen the hole and pulled back, along with the casing, through the pilot hole. Directional drilling is usually used for longer bores. The ultimate boring method to be used at each location will be determined during the final design and engineering process.

PG&E anticipates that water would be used for dust suppression along the cable segment. The amount of water would vary depending on the length of access roads being used each day, the road surface conditions, the weather conditions, including temperature and wind speed, as well as other site-specific conditions. PG&E does not expect to require significant amounts of jobsite water for foundation construction or other activities. However, this could change if unexpected conditions arise. For example, actual soil properties or groundwater elevations may require alternative construction practices that could require additional water.

Boring would begin by digging a bore pit at the sending end and a trench at the receiving end of the bore. The bore pit would be approximately 50 feet long, 20 feet wide, and 20 feet deep. The receiving area for the bore casing would be approximately 10 feet by 20 feet. The elevation at the bottom of the bore pit and the receiving trench would be approximately equal. The bore equipment would then be installed in the bore pit. The steel casing would be welded in 10- to 15-foot sections and jacked into the bore as the boring operation proceeds. At each bore crossing, a minimum rectangular construction access area approximately 100 feet long by 80 feet wide for equipment staging would be required to perform the bore operation.

STEP 5 – JOB SITE CLEANUP

As part of the final project construction activities, PG&E would restore all removed curbs, gutters, and sidewalks, repave all removed or damaged paved surfaces, restore landscaping or vegetation as necessary, and clean up the job site to preconstruction conditions.

1.8.3 CONSTRUCTION AT SWITCHYARDS

At each switchyard, the following equipment would be installed within the existing fence lines:

- one termination structure;
- one transition structure;
- one breaker (switch);
- one coupling capacitive voltage transformer (CCVT) structure; and
- bus connections from the new cable to the existing structures within each switchyard.

The termination structures, shown in **Figure 1-3**, would consist of both underground and aboveground components. The aboveground portion would consist of three 16-foot-tall poles. The transition structures, shown in **Figure 1-4**, would be low-profile tubular steel pole frame structures measuring 40 feet wide and 45 feet high. The breaker (switch) structures, shown in **Figures 1-5 and 1-7**, would be approximately 40 feet wide, 50 feet high, and 40 feet long. The Coupling Capacitive Voltage Transformer (CCVT) structure, shown in **Figure 1-6**, would be approximately 7 feet tall and 15 feet wide. Neither switchyard would be expanded beyond the existing fence line for these modifications.

At the Potrero Switchyard, the bus connection would be attached to an existing bay (Bay 18). The transition structure and breaker would be installed within the switchyard toward the southeastern side of the station behind Bay 18.

At the Hunters Point Switchyard, the transition structure would be installed near the eastern end of the switchyard on the upper bench of the station. A new prefabricated metal control building, measuring 16 feet wide by 48 feet long would be installed to house relays. This control building would be located north of Evans Avenue and immediately south of an existing 40-foot-tall water tank, some smaller tanks, and aboveground piping. Photographs of a representative control building are included in **Figure 1-7**. The breaker and CCVT structure would be installed near the middle of the station on the lower bench.

Halophane light fixtures would be installed on the breaker and bus structure at each switchyard and on the control building at the Hunters Point Switchyard at a height of approximately 9 feet pointing downward.

1.8.4 PERSONNEL

PG&E expects to utilize approximately 25 construction personnel for excavation and conduit installation and approximately 6 truck drivers during conduit installation using two excavation crews. Approximately 15 construction personnel would be employed during cable installation. The number of employees would peak at approximately 60 and would include switchyard workers, supervisors, and inspectors. About 20 percent of the construction crew would be composed of local PG&E employees.

1.8.5 CONSTRUCTION SCHEDULE

PG&E projects that in order to enable project operation by December 2005, project construction must begin on or before April 1, 2005 (Essex Environmental, 2003). The entire proposed project should be completed in approximately nine months, barring unexpected complications. Conduit installation would take approximately eight months and cable installation would take approximately two months, overlapping conduit installation by one month.

Project construction would occur between 7:00 a.m. and 8:00 p.m., or during times set by the City in the Excavation Permit. If trenching work would cause traffic congestion, the City may require nighttime work to avoid traffic disruption. Mitigation measures have been proposed by PG&E to avoid adverse impacts to traffic as are provided in Section 2.15, *Transportation and Traffic*. In addition, mitigation measures for noise impacts from nighttime construction are provided in Section 2.11, *Noise*. PG&E would identify any applicable city, county, state, federal, and railroad regulations, ordinances, and restrictions to be complied with prior to and during construction.

1.9 OPERATION AND MAINTENANCE

1.9.1 FACILITY INSPECTION

Regular inspection of power lines, instrumentation and control, and support systems is critical for safe, efficient, and economical operation. Early identification of items needing maintenance, repair, or replacement would ensure continued safe operation of the project. Aboveground components would be inspected at least annually for corrosion, equipment misalignment, loose fittings, and other common mechanical problems. The underground portion of the line would be monitored regularly from inside the vaults; therefore, inspections would not significantly disturb traffic using city streets.

1.10 REQUIRED APPROVALS

The following permits and approvals would be required for construction of the proposed project:

- Permit to Construct in compliance with GO No. 131-D of the California Public Utilities Commission
- Compliance with CEQA
- National Pollutant Discharge Elimination System Stormwater Construction Permit for discharges of stormwater associated with Small Linear Underground/Overhead Construction Projects (General Permit)-Regional Water Quality Control Board
- Excavation Permit – City and County of San Francisco to construct within roadways and railroads
- Special Traffic Permit – City and County of San Francisco for lane and sidewalk closures

- Night Noise Permit – City and County of San Francisco
- Encroachment permits from Caltrans District 4 for crossings of Interstate 280, and from the Peninsula Corridor Joint Powers Board for crossings of the Caltrain tracks
- Land Rights Permit from Port of San Francisco as the underlying fee owner of streets crossed by this route for the railroad tracks that cross Arthur Avenue and Quint Street.

1.11 POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

Table 1-2 summarizes the potential impacts and proposed mitigation measures for the proposed project. Table 1-2 includes mitigation measures that PG&E proposed to mitigate impacts to the surrounding environment, as well as those proposed by the CPUC in the MND. The mitigation measures summarized in Table 1-2 would reduce potentially significant environmental impacts to a less than significant level.

TABLE 1-2
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
<i>Aesthetics</i>			
No significant impacts anticipated for aesthetics.			
<i>Agricultural Resources</i>			
No significant impacts anticipated for agricultural resources.			
<i>Air Quality</i>			
AQ-1: Construction and demolition activities associated with facility construction would generate short-term emissions of criteria pollutants, including suspended and inhalable particulate matter and equipment exhaust emissions.		AQ-1: The following measures prescribed by BAAQMD shall be implemented to ensure that construction impacts are less than significant	Less than Significant
	APM-1a: All construction personnel working on the project shall be trained prior to starting construction on methods for minimizing air quality impacts during construction.		
	APM-1b: All active construction areas, access roads, and staging areas shall be watered down as necessary to control dust.	<ul style="list-style-type: none"> Construction areas, unpaved access roads, and staging areas shall be watered at least twice daily during dry weather, or soil stabilizers shall be applied during active work. 	
	APM-1c: All trucks hauling soil and other loose material shall be covered, or at least two feet of freeboard shall be maintained around the sides of the truck bed.	<ul style="list-style-type: none"> Trucks hauling soil and other loose material shall either be covered, have at least two feet of freeboard, or be sprayed with water prior to arriving and departing from the construction site. 	
	APM-1d: Streets, paved access roads, and parking lots shall be swept daily with water sweepers if visible soil material is carried onto adjacent public streets.	<ul style="list-style-type: none"> Paved access roads, parking areas, and staging areas at construction sites and streets shall be cleaned daily with water sweepers if excessive soil material is carried onto adjacent public streets. 	

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
	APM-1e: Exposed stockpiles of soil and other excavated materials shall be enclosed or covered as necessary to control dust.	<ul style="list-style-type: none"> Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.). 	
	APM-1f: Vegetation removed during construction shall be restored to preconstruction conditions.	<ul style="list-style-type: none"> Replant vegetation in disturbed areas as quickly as possible after project completion, taking into account optimal season and survival rates. 	
		<ul style="list-style-type: none"> Construction vehicles shall use paved roads to access the construction site wherever possible. 	
		<ul style="list-style-type: none"> Vehicle speeds shall be limited to 15 mph or less on unpaved roads and construction areas. 	
		<ul style="list-style-type: none"> A carpooling strategy shall be implemented for construction workers prior to commencing construction (during construction worker orientation and training). This strategy shall be submitted to and approved by the CPUC prior to commencement of project construction. 	
		<ul style="list-style-type: none"> Vehicles used for construction activities shall be tuned per the manufacturers' recommended maintenance schedule, if reasonably available. 	
		<ul style="list-style-type: none"> Vehicle idling time shall be minimized whenever possible. 	
		<ul style="list-style-type: none"> Install sandbags or other erosion control measures to prevent silt runoff to public roadways. 	
		<ul style="list-style-type: none"> Suspend excavation and grading activity when dust control mitigation measures become ineffective due to excessive winds. 	

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
		<ul style="list-style-type: none"> Designate a person or persons to monitor the dust control program and order increased watering, as necessary, to prevent transport of dust offsite. The name and telephone number of such persons shall be provided to the BAAQMD prior to the start of construction. 	
		The CPUC mitigation monitor shall oversee compliance with the above measures during construction.	
AQ-2: Project construction could result in the release of toxic air contaminant (TAC) emissions during disturbance of contaminated soils and/or serpentine rocks.		AQ-2: In addition to implementation of Mitigation Measure AQ-1, the following measures prescribed by BAAQMD shall be implemented to ensure that TAC emissions from construction activities would be less than significant	Less than Significant
		<ul style="list-style-type: none"> Notification to BAAQMD of construction activities, such as grading operations, when the activity occurs in areas where ultramafic and serpentine rock or naturally-occurring asbestos may be found, shall be required. 	
		<ul style="list-style-type: none"> Ensure that construction operations do not result in visible emissions crossing the project boundaries in areas where hazardous waste or serpentine rocks exist. 	
		<ul style="list-style-type: none"> Construction projects that will disturb more than one acre of asbestos containing material shall prepare and obtain district approval for an asbestos dust mitigation plan. The plan shall specify how the operation will minimize emissions and must address specific emission sources. 	
		<ul style="list-style-type: none"> Removal of any asbestos containing materials shall be performed by a CAL-OSHA certified, licensed asbestos abatement contractor. 	

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
		<ul style="list-style-type: none"> If structures are disturbed containing asbestos and the material becomes friable, removal of friable materials with a concentration of one percent or greater and at a quantity of 160 square feet or 260 linear feet or greater shall require notification to the Regional EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) office and BAAQMD. 	
		<ul style="list-style-type: none"> All handling and disposal of toxic materials shall be performed by a certified solid waste facility. 	
		Additionally, Mitigation Measure LUP-1, provided in Section 2.9 <i>Land Use</i> , shall be implemented to minimize impacts to sensitive receptors.	
<i>Biological Resources</i>			
No significant impacts anticipated for biological resources.			

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
<i>Cultural Resources</i>			
CR-1: Project construction could result in the disturbance of unknown buried prehistoric cultural resources and/or potential historic contents in artificial fill material along the project route.		CR-1a: Pursuant to CEQA Guidelines 15064.5 (f), "provisions for historical or unique archaeological resources accidentally discovered during construction" shall be instituted. Therefore, in the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and PG&E shall consult with a qualified archaeologist or paleontologist to assess the significance of the find. If any find is determined to be significant, representatives of PG&E and the qualified archaeologist shall meet to determine the appropriate course of action. All significant cultural resource materials recovered shall be subject to scientific analysis, professional museum curation, and a report prepared by the qualified archaeologist according to current professional standards.	Less than Significant

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
	<p>APM-2a: Prior to the initiation of construction or ground-disturbance, all construction personnel shall be trained on the potential for exposing subsurface cultural resources. The training shall provide information on the procedures to be followed upon the discovery or suspected discovery of archaeological materials, including Native American remains.</p> <p>APM-2b: A monitor shall be on-site during all underground trenching activities to watch for potential discoveries.</p> <p>APM-2c: Upon discovery of possible buried cultural materials (including potential Native American skeletal remains), work in the immediate area of the find shall be halted and the monitor shall be notified. Once the find has been identified and evaluated, a qualified archaeologist shall make the necessary plans for treatment of the find and mitigation of impacts if the find is determined to be significant as defined by the California Environmental Quality Act. PG&E will comply with all State laws in the event of the exposure of Native American skeletal remains.</p>	<p>CR-1b: PG&E shall notify a qualified paleontologist of any unanticipated discoveries made by either the cultural resources monitor or construction personnel and subsequently document the discovery as needed. In the event of an unanticipated discovery of a breas, or seeps of natural petroleum that trapped extinct animals and preserved and fossilized their remains, and/or trace fossil during construction, excavations within 50 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find.</p>	
CR-2: Project construction could result in the discovery and disturbance of unknown human remains.	See. APM-2a, 2b, and 2c.	CR-2: In the event of the discovery of human remains, measures shall be followed pursuant to CEQA Guidelines 15064.5 (e) (1).	Less than Significant

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
		<p>(1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:</p> <p>(A) The City of San Francisco Coroner shall be contacted to determine that no investigation of the cause of death is required, and</p> <p>(B) If the Coroner determines the remains to be Native American:</p>	
		<ol style="list-style-type: none"> 1. The Coroner shall contact the Native American Heritage Commission within 24 hours. 2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. 3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98. 	

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
<i>Geology, Soils, and Seismicity</i>			
GEO-1: Structural damage could occur over a long period of time, usually the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils.		GEO-1: A site-specific, design level geotechnical investigation shall be performed to assess the extent and consequence of the expansive soils. The sub grade shall be prepared and foundations constructed as recommended in the investigation to limit the impact due to expansive soils to less than significant. Recommendations and conclusions determined by a registered geotechnical engineer or qualified civil engineer shall be incorporated in the final design as part of the project. The design measures selected to mitigate expansive soil hazards shall be submitted to and approved by PG&E and the CPUC.	Less than Significant
GEO-2: The proposed project could result in increased erosion, especially in areas that are underlain by Bay Mud and other fine-grained material and also where the soil would be exposed during construction.		GEO-2: During construction and grading, erosion and sediment control measures shall be conducted in accordance with best management practices for the reduction of pollutants in runoff (refer to Section 2.8, <i>Hydrology and Water Quality</i>). The components of the proposed project would be subject to NPDES requirements and would require the acquisition of a NPDES general construction permit. Erosion of soil materials to local waterways and its affects on water quality are further discussed in Section 2.8, <i>Hydrology and Water Quality</i> . Best management practices for sediment and dust control shall be implemented to limit the impact due to erosion to a less than significant level. Best management erosion control measures shall also be implemented in unpaved areas, including the property between Cesar Chavez and Marin Streets.	Less than Significant

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
GEO-3: The proposed project could be adversely affected by differential settlement, fault rupture, liquefaction, and seismic-related ground failure.		GEO-3: A site-specific, design level geotechnical investigation, shall be performed to assess the potential for liquefaction and seismic-related ground failure in susceptible areas along the selected project route. The duct bank and vaults shall be designed to accommodate or mitigate the effects of ground settlement and loss of foundation bearing strength in the event of an earthquake. A geotechnical assessment of the rail crossings at Third and 23rd Streets, Third and Evans Avenue, and Evans Avenue and Quint Street, shall be performed to ensure that the boring alignment and bore casing design appropriately address and minimize the impact of liquefaction. Recommendations and conclusions determined by a registered geotechnical engineer or qualified civil engineer shall be incorporated in the final design as part of the project. PG&E shall submit the design measures selected to mitigate liquefaction to the CPUC for review and approval.	Less than Significant
GEO-4: The proposed project is in an area underlain by artificial fill, which could be susceptible to earthquake-induced settlement.		GEO-4: A site-specific, design level geotechnical investigation shall be performed to assess the extent and consequence of ground instability. The duct bank, vaults, and substation structures shall be designed to accommodate or mitigate the effects of ground settlement and loss of foundation bearing strength in the event of an earthquake. Recommendations and conclusions determined by a registered geotechnical engineer or qualified civil engineer shall be incorporated in the final design as part of the project. PG&E shall submit the design measures selected to mitigate ground instability hazards to the CPUC for review and approval.	Less than Significant

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
GEO-5: The proposed project could be susceptible to ground shaking effects in the event of an earthquake.		GEO-5a: Switchyard impotents, new substation equipment, structures and foundations shall be procured and designed in accordance with PG&E's engineering practices, which include the application of seismic design provisions (e.g., the Institute of Electrical and Electronic Engineers (IEEE) 693 for selected critical equipment, the current edition of the California Building Code (CBC), and various industry standards) intended to mitigate earthquake damage to substation equipment and structures. The design criteria selected to mitigate ground shaking hazards shall be submitted to and approved by PG&E and the CPUC.	Less than Significant
<i>Hazards and Hazardous Materials</i>			
HAZ-1: Construction excavation could encounter contaminated materials, causing an increase in risk of exposure of hazardous materials to humans and the environment. In addition, construction activities requiring the use of hazardous materials may increase the risk of exposure to hazardous materials.		HAZ-1a: PG&E shall ensure, through the enforcement of contractual obligations, that all contractors transport, store, and handle construction-related hazardous materials in a manner consistent with relevant regulations and guidelines, including those recommended and enforced by the U.S. Department of Transportation, RWQCB, San Francisco Department of Public Health, and the local fire department. PG&E shall also ensure that all contractors control the source of any leak and immediately contain any spill utilizing appropriate spill containment and countermeasures. If required by any regulatory agency, contaminated media shall be collected and disposed of at an off-site facility approved to accept such media. In addition, all precautions required by the RWQCB-issued National Pollution Discharge Elimination System (NPDES) construction activity storm water permits shall be taken to ensure that no hazardous materials enter any storm drains or nearby waterways.	Less than Significant

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
		<p>HAZ-1b: PG&E shall implement all development requirements within the area regulated under San Francisco's Maher Ordinance, which include soil sampling and analysis for specific inorganic and organic chemicals. PG&E shall also implement its specific protocol for subsurface soil sampling and testing for contaminated soils during construction activities. In addition to the requirements of the Maher Ordinance and PG&E's protocols, the following mitigation measures shall be implemented to ensure that impacts regarding the potential to expose the public, workers, and the environment to contaminated soil, surface, and/or groundwater along the proposed route would remain less than significant.</p>	

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
	<p>APM-3a: A Hazardous Substance Control and Emergency Response Plan shall be prepared for the project and implemented during construction. It shall prescribe hazardous material handling procedures to reduce the potential for a spill during construction, or exposure of the workers or public to hazardous materials. The plan shall provide a discussion of appropriate response actions in the event that hazardous materials are released or encountered during excavation activities.</p> <p>The plan shall include proposed methodologies for managing excavation materials, including asphalt, concrete, debris, and soil. Details on dust control, runoff control, tarping, and air monitoring (of the trench and temporary excavated materials storage areas) shall be included in the plan. The plan shall be submitted to the Hazardous Material Unified Program Agency, or another appropriate oversight agency, for approval prior to initiating excavation activities.</p>	<ul style="list-style-type: none"> • <i>Hazardous Substance Control and Emergency Response Plan</i> – PG&E shall prepare a Hazardous Substance Control and Emergency Response Plan (the Plan) for the project and implement it during project construction. The Plan shall prescribe hazardous material handling procedures to reduce the potential for a spill during construction, or exposure of the workers or public to hazardous materials. The Plan shall also include a discussion of appropriate response actions in the event that hazardous materials are released or encountered during excavation activities. In addition, the Plan shall include proposed methodologies for tracking and managing excavation materials, including asphalt, concrete, debris, and soil. Details on dust control, runoff control, tarping, and air monitoring (of the trench and temporary excavated materials storage areas) shall be included in the Plan. PG&E shall submit the Plan to the Hazardous Material Unified Program Agency, or another appropriate oversight agency, for review and approval prior to initiating any project-related excavation activities. 	
	<p>APM-3b: A Health and Safety Plan shall be written and implemented to ensure the health and safety of construction workers and the public during project construction. The plan shall include information on the appropriate personal protective equipment to be used during excavation activities, sample collection, and material loading, testing, and disposal.</p>	<ul style="list-style-type: none"> • <i>Health and Safety Plan</i> – PG&E shall prepare and implement a Health and Safety Plan to ensure the health and safety of construction workers and the public during project construction. The Plan shall include information on the appropriate personal protective equipment to be used during excavation activities and material loading, testing, and disposal. 	

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
	APM-3c: A Stormwater Pollution Prevention Plan (SWPPP) shall be prepared for the project and implemented during construction. The SWPPP shall contain information on engineering controls to minimize turbid stormwater runoff or the acceleration of sedimentation rates.	<ul style="list-style-type: none"> • <i>Stormwater Pollution Prevention Plan</i> – PG&E shall prepare a Stormwater Pollution Prevention Plan (SWPPP) for the proposed project to be implemented during construction. The SWPPP shall contain information on engineering controls to minimize turbid stormwater runoff or the acceleration of sedimentation rates. 	
	APM-3d: An environmental training program shall be established and delivered to communicate environmental concerns and appropriate work practices to all construction field personnel. The training program shall emphasize site-specific physical conditions to improve hazard prevention, and shall include a review of the Health and Safety Plan, Hazardous Substance Control and Emergency Response Plan, and the SWPPP.	<ul style="list-style-type: none"> • <i>Environmental Training Program</i> – PG&E shall ensure that an environmental training program is established and implemented to communicate environmental concerns and appropriate work practices to all construction field personnel. The training program shall emphasize site-specific physical conditions to improve hazard prevention and shall include a review of the Health and Safety Plan, Hazardous Substance Control and Emergency Response Plan, and the SWPPP. 	
	APM-3e: Oil-absorbent material, tarps, and storage drums shall be used to contain and control any minor releases of oil. Emergency-spill supplies and equipment shall be kept adjacent to all areas of work and in staging areas, and shall be clearly marked. Detailed information for responding to accidental spills and for handling any resulting hazardous materials shall be provided in the project's Hazardous Substance Control and Emergency Response Plan, which shall be implemented during construction.	<ul style="list-style-type: none"> • <i>Emergency Spill Supplies and Equipment</i> – PG&E shall ensure that oil-absorbent material, tarps, and storage drums are used to contain and control any minor releases. Emergency spill supplies and equipment shall be kept adjacent to all areas of work and in staging areas and shall be clearly marked. Detailed information for responding to accidental spills and for handling any resulting released hazardous materials shall be provided in the proposed project's Hazardous Substance Control and Emergency Response Plan, which shall be implemented during construction. 	

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
	<p>APM-3f: A trained environmental monitor shall be present during all project excavation activities. The monitor shall be equipped with the appropriate equipment to monitor air quality in excavation trenches, and to observe excavation spoils for the presence of potentially hazardous materials. The monitor shall have the experience and authority to select the appropriate personal protective equipment, determine appropriate soil and groundwater handling and disposal requirements, modify work activities, or stop work at any time to ensure worker and public health and safety.</p>	<ul style="list-style-type: none"> <i>Environmental Field Monitoring</i> – PG&E shall ensure that a trained environmental monitor be present during all proposed project excavation activities. The monitor shall be equipped with the appropriate equipment to monitor air quality in excavation trenches and to observe excavation spoils for the presence of potentially hazardous materials. PG&E shall ensure that the monitor has the experience and authority to select the appropriate personal protective equipment, determine appropriate soil and groundwater handling and disposal requirements, modify work activities, or stop work at any time to ensure worker and public health and safety. The environmental monitor shall be approved by the CPUC prior to the start of construction activities. 	

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
	<p>APM-3g: Excavated materials shall be separated into asphalt, concrete, debris, and soil, and hauled to one of the excavated materials storage areas located near the switchyards. Each material shall be placed on plastic sheeting, moistened to control dust, and covered in a manner to prevent runoff of turbid or contaminated stormwater. Analyses to determine the presence of hazardous materials in material to be disposed of shall be performed to determine the proper handling, transport, and disposal methods. The specific hazardous material disposal site(s) have not been identified at this time as PG&E shall use the analytical results to determine which landfill in the area is classified to receive the excavated materials.</p> <p>If groundwater is encountered in the excavation trenches, it shall be contained in Baker tanks and tested for turbidity and potential contaminants prior to being disposed of in accordance with local regulations. Non-contaminated groundwater shall be released to the stormwater conveyance system (with prior approval).</p>	<ul style="list-style-type: none"> <i>Storage, Testing, and Disposal of Excavated Materials and Groundwater</i> – PG&E shall ensure that excavated materials are separated into asphalt, concrete, debris, and soil. Soils and any potentially contaminated materials shall be and hauled to one of the excavated materials storage areas located near the switchyards. Each material shall be placed on plastic sheeting, moistened to control dust, and covered in a manner to prevent runoff of turbid or contaminated stormwater. Analyses to determine the presence of hazardous materials in material to be disposed of shall be performed by EPA certified laboratories to comply with the requirements of the receiving landfill. PG&E shall ensure that all contaminated soils are disposed of at either a Class I or Class II landfill, depending on the extent of hazardous materials contamination in the soils. Laboratory test reports shall be used to determine the proper handling, transport, and disposal methods. 	
		If groundwater is encountered in the excavation trenches, it shall be contained in Baker tanks and tested for turbidity and potential contaminants prior to being disposed of in accordance with local regulations. Non- contaminated groundwater shall be released to the stormwater conveyance system (with prior approval).	
		Additionally, Mitigation Measure LUP-1, provided in Section 2.9 <i>Land Use</i> , shall be implemented to minimize impacts to sensitive receptors.	

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
<i>Hydrology and Water Quality</i>			
HYD-1: The proposed project could result in adverse impacts to groundwater quality.	APM-4a: Once the duct bank is installed, it shall be surrounded with concrete. Above the duct bank, the trench shall be filled with fluidized thermal backfill (a blend of sand, gravel, fly ash, and cement). Because permeability of these materials is low, a section of drainpipe shall be laid across the trench directly above the concrete at approximately 100-foot intervals to allow groundwater to pass through the low permeability backfill material. Alternatively, gravel drains or other drainage measures may be installed across the pipeline.	HYD-1: After installation of the duct bank, it shall be surrounded with concrete. The trench shall be filled with fluidized thermal backfill, a blend of sand, gravel, fly ash, and cement above the duct bank. Because the permeability of these materials is low, a section of drainpipe shall be laid across the trench directly above the concrete at approximately 100-foot intervals to allow groundwater to pass through these materials. Alternatively, gravel drains or other drainage measures may be installed across the cable line.	Less than Significant
<i>Land Use, Plans, and Policies</i>			
LUP-1: Project construction could result in adverse impacts, associated with traffic congestion and noise, to adjacent residential land uses along Minnesota Street between 25th and 26th Streets.		LUP-1: PG&E shall move the segment of the proposed project route from 25th Street between Tennessee and Minnesota Streets and Minnesota Street between 25th and Cesar Chavez Streets to instead continue down Tennessee Street from 25th Street to Cesar Chavez Streets and then travel east along Cesar Chavez Street.	Less than Significant
<i>Mineral Resources</i>			
No significant impacts anticipated for mineral resources.			
<i>Noise</i>			
NOI-1: Construction activities would intermittently and temporarily generate noise levels above existing ambient levels in the project vicinity.	APM-5a: Intake and exhaust mufflers recommended by the manufacturers shall be installed on impact tools and equipment.	NOI-1: PG&E shall ensure that the following construction noise mitigation measures are implemented. <ul style="list-style-type: none"> Intake and exhaust mufflers recommended by the manufacturers will be installed on impact tools and equipment. 	Less than Significant

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
	APM-5b Pavement breakers and jackhammers shall be equipped with acoustically attenuated shields or shrouds recommended by the manufacturers.	<ul style="list-style-type: none"> All equipment used on the project shall be muffled and maintained in good operating condition. All internal combustion engine-driven equipment shall be fitted with intake and exhaust mufflers which are in good condition. 	
	APM-5c Standard practices shall be implemented when feasible, including directing exhausts away from buildings and shielding other equipment.	<ul style="list-style-type: none"> Construction contractors shall locate fixed construction equipment such as compressors as far as possible from noise-sensitive receptors during construction. 	
	APM-5d No construction shall take place within 100 feet of residences at night (8 p.m. to 7 a.m.).	<ul style="list-style-type: none"> Construction hours shall be limited to between the hours of 7:00 a.m. and 8:00 p.m. in areas where residential receptors exist within 100 feet of construction or in accordance with the requirements of the excavation permit issued by the City of San Francisco. 	
		Additionally, Mitigation Measure LUP-1, provided in Section 2.9 <i>Land Use</i> , shall be implemented to minimize impacts to sensitive receptors.	
NOI-2 Project construction could result in adverse impacts to nearby buildings or receptors due to excessive construction vibration.	See APM-5b	NOI-2 PG&E shall ensure that the following construction vibration mitigation measures are implemented. <ul style="list-style-type: none"> Pavement breakers and jack hammerers shall be equipped with acoustically attenuated shields or shrouds recommended by the manufacturers. 	Less than Significant
		<ul style="list-style-type: none"> Vibratory drivers instead of conventional pile drivers shall be used where feasible and effective in reducing impact noise from shoring of jack-pit and thrust-block excavations in close proximity to sensitive receptors. 	
		Additionally, Mitigation Measure LUP-1, provided in Section 2.9 <i>Land Use</i> , shall be implemented to minimize impacts to sensitive receptors.	

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
<i>Population and Housing</i>			
PH-1: Construction activities would result in the temporary displacement of the homeless population that currently resides along the proposed project route.		PH-1: PG&E shall contact and coordinate with the Mayor's Office on Homelessness to inform the resident population on the project roadways about displacement due to construction.	Less than Significant
<i>Public Services</i>			
PS-1: The proposed facilities could be subject to vandalism and/or terrorism.		PS-1: All manhole covers installed as part of the proposed project shall be consistent with PG&E standard manhole covers. Each manhole cover shall weigh at least 350 pounds or the covers shall be bolted to the manhole frame at four locations using a stainless steel pent-head bolt whenever the manhole is not in use.	Less than Significant
PS-2: Project construction activities would result in the temporary closure and/or restriction of some parks, including the Bay Trail.		PS-2a: PG&E shall coordinate with the City and County of San Francisco Park and Recreation Department and the Association of Bay Area Governments' Bay Trail staff prior to closure and/or restriction of park and recreation facilities.	Less than Significant
		PS-2b: Park facilities, including the Bay Trail along Illinois Street between 22nd and 23rd Streets shall not be closed and/or restricted for a period of time exceeding two consecutive months.	
<i>Recreation</i>			
No significant impacts anticipated for recreation.			
<i>Transportation / Traffic</i>			
TRA-1: Project construction within existing streets would reduce the number of, or the available width of, travel lanes on roads, resulting in temporary disruption of traffic flows and increases in traffic congestion.		TRA-1a: PG&E shall obtain and comply with local and state road encroachment permits, and railroad encroachment permits.	Less than Significant
		TRA-1b: PG&E shall implement the following transportation/traffic measures.	

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
	APM-6a: PG&E shall prepare and implement a Traffic Management Plan that is subject to approval by the City and County of San Francisco prior to construction. The plan shall:	<ul style="list-style-type: none"> PG&E shall prepare and implement a Traffic Management Plan. PG&E shall submit the Plan to the City and County of San Francisco for review and approval prior to construction. The plan shall: 	
	<ul style="list-style-type: none"> Include a discussion of work hours, haul routes, limits on the lengths of open trench, work area delineation, traffic control, and flagging. Identify all access and parking restrictions and signage requirements. 	<ul style="list-style-type: none"> include a discussion of work hours, haul routes, limits on the lengths of open trench, work area delineation, traffic control and flagging; identify all access and parking restrictions and signage requirements; 	
	<ul style="list-style-type: none"> Layout a plan for notifications and a process for communicating with affected residents and businesses prior to the start of construction. Advance public notification shall include postings of notices and appropriate signage of construction activity. The written notification shall include the construction schedule, the exact location and duration of activities within each street (i.e., which lanes and access points/driveways shall be blocked on which days and for how long), and a toll-free telephone number for receiving questions or complaints. 	<ul style="list-style-type: none"> layout a plan for notifications and a process for communicating with affected residents and businesses prior to the start of construction. Advance public notification would include postings of notices and appropriate signage of construction activities. The written notification shall include the construction schedule, the exact location and duration of activities within each street (i.e., which lanes and access points/driveways would be blocked on which days and for how long), and a toll-free telephone number for receiving questions or complaints; 	
	<ul style="list-style-type: none"> Include a plan to coordinate all construction activities with emergency service providers in the area at least one month in advance. Emergency service providers shall be notified of the timing, location, and duration of construction activities. All roads shall remain passable to emergency service vehicles at all times. 	<ul style="list-style-type: none"> include a plan to coordinate all construction activities with emergency service providers in the area at least one month in advance. Emergency service providers shall be notified of the timing, location, and duration of construction activities. All roads shall remain passable to emergency service vehicles at all times; 	

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
	<ul style="list-style-type: none"> • Include the requirement that all open trenches be covered with metal plates at the end of each workday to accommodate traffic and access. 	<ul style="list-style-type: none"> – include the requirement that all open trenches be covered with metal plates at the end of each workday to accommodate traffic and access; 	
	<ul style="list-style-type: none"> • Specify the street restoration requirements pursuant to PG&E's franchise agreements with the City and County of San Francisco. 	<ul style="list-style-type: none"> – specify the street restoration requirements pursuant to PG&E's franchise agreements with the City and County of San Francisco; 	
	<ul style="list-style-type: none"> • Discuss temporary pedestrian, wheelchair, and bicycle access through detours or safe areas along the construction zone, where construction shall result in the temporary closure of sidewalks or bike lanes. These areas shall be delineated and signed. 		
		<ul style="list-style-type: none"> • PG&E shall identify all roadway locations where special construction techniques (e.g., horizontal boring, directional drilling or night construction) would be used to minimize impacts to traffic flow. 	
		<ul style="list-style-type: none"> • PG&E shall develop circulation and detour plans to minimize impacts to local street circulation. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone. 	
		<ul style="list-style-type: none"> • PG&E shall consult with San Francisco Muni at least one month prior to construction to coordinate bus stop relocations (as necessary) and to reduce potential interruption of transit service. 	

TABLE 1-2 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR PG&E'S POTRERO TO HUNTERS POINT 115 kV CABLE PROJECT

ENVIRONMENTAL IMPACT	MITIGATION MEASURES PROPOSED IN THE APPLICANT'S PEA	MITIGATION MEASURES PROPOSED IN THIS MND	SIGNIFICANCE AFTER PROPOSED MND MITIGATION
		<ul style="list-style-type: none"> PG&E shall coordinate with the City and County of San Francisco, San Francisco Muni, the Port of San Francisco, and any other appropriate entity, regarding measures to minimize the cumulative effect of simultaneous construction activities in overlapping areas. 	
	APM-6b: If excavation is scheduled to occur while the moratorium is in effect on 23rd Street, PG&E shall repave and restripe the entire street from curb to curb (not just the area that was trenched).	<ul style="list-style-type: none"> If excavation is scheduled to occur while the moratorium is in effect on Cesar Chavez Street (until January 1, 2005) and on 23rd Street (until June 2, 2005), PG&E shall repave and restripe the entire street from curb to curb (not just the area that was trenched). 	
TRA-2: Project construction would result in short-term increases in vehicle trips by construction vehicular activities and construction workers.		TRA-2: Implement Mitigation Measures TRA-1 and TRA-1b.	Less than Significant
TRA-3: Project construction within roadways and railroad rights-of-way would temporarily increase the potential for accidents.		TRA-3: Implement Mitigation Measures TRA-1 and TRA-1b.	Less than Significant
TRA-4: Project construction within or across streets would affect emergency access, and access to local land uses.		TRA-4: Implement Mitigation Measures TRA-1 and TRA-1b.	Less than Significant
TRA-5: Project construction could temporarily disrupt bus service along the proposed project route.	APM-6c: PG&E shall consult with San Francisco Muni at least one month prior to construction to coordinate bus stop relocations (as necessary) and to reduce potential interruption of transit service.	TRA-5: Implement Mitigation Measures TRA-1 and TRA-1b.	Less than Significant
<i>Utilities and Services</i>			
No significant impacts anticipated for utilities and services.			

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